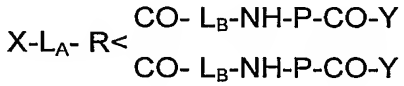
CLAIMS

1. A conjugate having the following structure



wherein

R represents $-N(CH_2-)_2$, -NHCH< or $-NHCH(CH_2-)_2$,

X represents a hydrogen or a peptidic group, and

L_A is optionally present and is an amino acid or a peptide containing at least 2 amino acid residues,

L_B is optionally present and is an amino acid or a peptide containing at least 2 amino acid residues,

P is a peptide selected from full length or fragments of amyloid proteins or proteins with substantial similarity to an amyloid protein,

Y is OH or NH_2,

and pharmaceutically acceptable salts thereof.

2. A conjugate according to claim 1, which upon administration to a mammal is capable of eliciting a production of antibodies having specificity towards the conjugate itself, and inducing an immune response in the mammal, thereby preventing or reducing amyloid-induced cellular toxicity and/or the formation of amyloid fibrils, plaques and/or deposits.

3. A conjugate according to claim 2, wherein the antibodies produced are having specificity towards one or more C-terminally presented P peptides of the conjugate.

4. A conjugate according to any of claims 1-3, wherein P is a fragment comprising at least one region of an amyloid protein.

5. A conjugate according to claim 4, wherein the region is selected from the group comprising the C-terminal region, beta sheet region, cytotoxic region, GAG-binding site region, or macrophage adherence region.

6. A conjugate according to any of the preceding claims, wherein the amyloid proteins are derived from amyloid precursor proteins selected from the group comprising serum amyloid A protein (ApoSSA), immunoglobulin light chain, immunoglobulin heavy chain, ApoA1, transthyretin, lysozyme, fibrinogen alpha chain, gelsolin, cystatin C, amyloid beta protein precursor (beta.-APP), $beta_2$ microglobulin, prion precursor protein (PrP), atrial natriuretic factor, keratin, islet amyloid polypeptide and synuclein or any polypeptides with substantial similarity to any of the above.

7. A conjugate according to any of claims 1-5, wherein the amyloid proteins are selected from amyloid beta (1-43), amyloid beta (1-42), amyloid beta (1-41), amyloid beta (1-40), amyloid beta (1-39) and amyloid beta (1-38).

8. A conjugate according to claim 7, wherein P is a fragment of amyloid beta (1-43), amyloid beta (1-42), amyloid beta (1-41), amyloid beta (1-40), amyloid beta (1-39) or amyloid beta (1-38).

9. A conjugate according to claim 8, wherein P contains the C-terminus of amyloid beta.

10. A conjugate according to claim 8, wherein P is a fragment of 10 amino acids from the C-terminus of amyloid beta.

11. A conjugate according to claim 8, wherein P is a fragment of 9 amino acids from the C-terminus of amyloid beta.

12. A conjugate according to claim 8, wherein P is a fragment of 8 amino acids from the C-terminus of amyloid beta.

13. A conjugate according to claim 8, wherein P is a fragment of 7 amino acids from the C-terminus of amyloid beta.

14. A conjugate according to claim 8, wherein P is a fragment of 6 amino acids from the C-terminus of amyloid beta.

15. A conjugate according to claim 8, wherein P is a fragment of 5 amino acids from the C-terminus of amyloid beta.

16. A conjugate according to claim 8, wherein P is a fragment of 4 amino acids from the C-terminus of amyloid beta.

17. A conjugate according to claim 8, wherein P is a fragment of 3 amino acids from the C-terminus of amyloid beta.

18. A conjugate according to claim 12, wherein P is fragment 35-42 of amyloid beta (1-42).

19. A conjugate according to claim 13, wherein P is fragment 36-42 of amyloid beta (1-42).

20. A conjugate according to claim 14, wherein P is fragment 37-42 of amyloid beta (1-42).

21. A conjugate according to claim 15, wherein P is fragment 38-42 of amyloid beta (1-42).

22. A conjugate according to claim 16, wherein P is fragment 39-42 of amyloid beta (1-42).

23. A conjugate according to claim 17, wherein P is fragment 40-42 of amyloid beta (1-42).

24. A conjugate according to any of the preceding claims, wherein X is a T cell epitope.

25. A conjugate according to claim 24, wherein X is a human T cell epitope including full-length tetanus toxoid, tetanus toxoid fragment FNNFTVSFWLRVPKVSASHLE and tetanus toxoid fragment YNDMFNNFTVSFWLRVPKVSASHLEQYGT, or a rodent T cell epitope including QYIKANSKFIGITEL.

26. A conjugate according to any of claims 1-23, wherein X is Keyhole Limpet Hemocyanin or BSA.

27. A method for the treatment, amelioration and/or prophylaxis of an amyloid-related disease in a mammal, the method comprising administering to the mammal an

antigenic amount of a conjugate as defined in any of the claims 1-26, wherein the conjugate elicits the production of antibodies having specificity towards the conjugate itself and induces an immune response in the mammal, thereby preventing or reducing amyloid-induced cellular toxicity and/or the formation of fibrils, plaques and/or amyloid deposits.

28. A method according to claim 27, wherein the antibodies produced are being specific towards one or more C-terminally presented P peptides of a conjugate as defined in claims 1-26.

29. A method according to claim 27 or 28, the method further comprises the administration of an adjuvant together with the conjugate.

30. A method according to claim 29, wherein the adjuvant is selected from the group comprising complete Freunds adjuvant, incomplete Freunds adjuvant, QS21, Aluminium hydroxide gel, MF59 and calcium phosphate.

31. A method according to any of claims 27-30, wherein the amyloid-related disease is Alzheimer's disease, Down's syndrome, vascular dementia or cognitive impairment.

32. Use of a conjugate as defined in any of claims 1-26 for the preparation of a pharmaceutical composition for the treatment and/or prophylaxis of an amyloid-related disease in a mammal.

33. A vaccine comprising a conjugate as defined in claims 1-26 together with an adjuvant.

34. A vaccine according to claim 33, wherein the adjuvant is selected from the group comprising complete Freunds adjuvant, incomplete Freunds adjuvant, QS21, Aluminium hydroxide gel, MF59 and calcium phosphate.

35. A method for producing an antibody in a mammal, the method comprising administering to the mammal an antigenic amount of a conjugate as defined in any of the claims 1-26, wherein the conjugate elicits the production of antibodies having specificity towards the conjugate itself.

36. A method according to claim 35, wherein antibodies produced are being specific towards one or more C-terminally presented P peptides of a conjugate as defined in claims 1-26.

37. A method according to claim 35 or 36, which further comprises the step of generating hybridoma cells by somatic cell hybridization for the production of monoclonal or polyclonal antibodies.

38. A method according to any of claims 35-37, wherein the mammal is a mouse or humanized mouse.

39. An antibody having specificity towards a conjugate as defined in claims 1-26.

40. An antibody having specificity towards one or more C-terminally presented P peptides in a conjugate as defined in any of claims 1-26.

41. An antibody according to claim 39 or 40, which is monoclonal.

42. An antibody according to any of claims 39-41, which is humanized or chimeric.

43. An antibody according to any of claims 39-42, which is produced by a method as defined in claims 35-48.

44. A method for the treatment and/or prophylaxis of an amyloid-related disease in a mammal, the method comprising administering to the mammal an antibody as defined in claims 39-43, thereby preventing or reducing amyloid-induced cellular toxicity and/or the formation of fibrils, plaques and/or amyloid deposits.

45. A method according to claim 44, wherein the amyloid-related disease is Alzheimer's disease, Down's syndrome, vascular dementia or cognitive impairment.